

CLAIMS

1. In a bidirectional ring network, in which nodes are mutually connected by network segments, a method of fault protection, comprising:

constructing a general mask indicating which of the segments can be reached;

for a given data flow to be conveyed through the network from a source node to a destination node, constructing a specific mask indicating the segments on a desired path of the flow; and

superimposing the general and specific masks in order to determine a disposition of the flow.

2. A method according to claim 1, wherein constructing the general mask comprises assigning a respective general mask bit to each of the segments, indicating whether the segment can be reached following occurrence of the fault.

3. A method according to claim 2, wherein constructing the specific mask comprises assigning a respective specific mask bit to each of the segments, indicating whether the flow was to be conveyed over the segment had the fault not occurred.

4. A method according to claim 1, wherein superimposing the masks comprises combining the masks by means of a Boolean operation.

5. A method according to claim 1, wherein superimposing the masks comprises determining whether to convey the data flow over the desired path, to steer the data flow over an alternative path, or to stop conveying the data flow.

6. A method according to claim 5, wherein superimposing the masks comprises generating a combined mask, and determining that the data flow should be conveyed over the desired path when the combined mask is null.

7. A method according to claim 5, wherein superimposing the masks comprises generating a combined mask, and determining that the data flow should be steered over the alternative path when the combined mask corresponds to the general mask.

8. A method according to claim 5, wherein superimposing the masks comprises generating a combined mask, and determining that the data flow should not be conveyed when the combined mask is neither null, nor does it correspond to the general mask.

9. A communication device for use in a bidirectional ring network, in which nodes are mutually connected by network segments, the device comprising a network processor, which is adapted to construct a general mask indicating which of the segments can be reached in the event of a fault in the network, and to construct a specific mask for a given data flow to be conveyed through the network from a source node to a destination node, the specific mask indicating the segments on a desired path of the flow, and to superimpose the general and specific masks in order to determine a disposition of the flow.

10. A device according to claim 9, wherein the general mask comprises a respective general mask bit for each of the segments, indicating whether the segment can be reached following occurrence of the fault.

11. A device according to claim 10, wherein the specific mask comprises a respective specific mask bit for each of the segments, indicating whether the flow was to be conveyed over the segment had the fault not occurred.
12. A device according to claim 9, wherein the processor is adapted to superimpose the masks by performing a Boolean operation on the masks.
13. A device according to claim 9, wherein the processor is adapted to determine whether to convey the data flow over the desired path, to steer the data flow over an alternative path, or to stop conveying the data flow based on the superimposed masks.
14. A device according to claim 13, wherein the processor is adapted to superimpose the masks so as to generate a combined mask, and to determine that the data flow should be conveyed over the desired path when the combined mask is null.
15. A device according to claim 13, wherein the processor is adapted to superimpose the masks so as to generate a combined mask, and to determine that the data flow should be steered over the alternative path when the combined mask corresponds to the general mask.
16. A device according to claim 13, wherein the processor is adapted to superimpose the masks so as to generate a combined mask, and to determine that the data flow should not be conveyed when the combined mask is neither null, nor does it correspond to the general mask.